

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A radiation-emitting thin-film semiconductor chip [[with]]
comprising:

an epitaxial multilayer structure, ~~which contains~~ comprising:

an active, radiation-generating layer, ~~and has~~

a first main face, and

a second main face [[-]] remote from the first main face [[-]] for coupling out

[[the]] radiation generated in the active, radiation-generating layer, and

a reflective layer or interface,

wherein the first main face of the multilayer structure is coupled to [[a]] the reflective layer or interface, and

wherein a region of the multilayer structure that adjoins the second main face of the multilayer structure is patterned by one- or two-dimensionally two-dimensional depressions forming convex elevations, the convex elevations having a height (h1) at least as large as a distance (h2) between the patterned region and the active, radiation-generating layer.

2. (Currently Amended) The semiconductor chip as claimed in claim 1, ~~wherein~~ further comprising a carrier element [[is]] coupled to the first main face, wherein [[and]] the reflective layer or interface is arranged between the carrier element and the multilayer structure.

3. (Cancelled) The semiconductor chip as claimed in claim 1, wherein the region of the multilayer structure that adjoins the second main face of the multilayer structure has convex elevations.

4. (Currently Amended) The semiconductor chip as claimed in claim ~~[[3]]~~ 1, wherein the elevations have ~~[[the]]~~ a form of truncated pyramids or truncated cones or a trapezoidal cross-sectional form.

5. (Currently Amended) The semiconductor chip as claimed in claim ~~[[3]]~~ 1, wherein the elevations have ~~[[the]]~~ a form of cones or a triangular cross-sectional form.

6. (Currently Amended) The semiconductor chip as claimed in claim ~~[[3]]~~ 1, wherein the elevations have ~~[[the]]~~ a form of sphere segments or a circle segment cross-sectional form.

7. (Currently Amended) The semiconductor chip as claimed in claim ~~[[3]]~~ 1, wherein the elevations have an inclination angle (β) of between approximately 30° and approximately 70°.

8. (Previously Presented) The semiconductor chip as claimed in claim 7, wherein the elevations have an inclination angle (β) of between approximately 40° and approximately 50°.

9. (Cancelled) The semiconductor chip as claimed in claim 3, wherein the height (h_1) of the elevations is at least as large as the distance (h_2) between a non-patterned region of the multilayer structure and the active, radiation-generating layer.

10. (Currently Amended) The semiconductor chip as claimed in claim ~~[[9]]~~ 1, wherein the height (h1) of the elevations is approximately twice as large as the distance (h2) between the ~~non-patterned~~ patterned region of the multilayer structure and the active, radiation-generating layer.

11. (Currently Amended) The semiconductor chip as claimed in claim ~~[[3]]~~ 1, wherein a cell size (d) of the elevations is at most approximately five times as large as the height (h1) of the elevations.

12. (Previously Presented) The semiconductor chip as claimed in claim 11, wherein the cell size (d) of the elevations is at most approximately three times as large as the height (h1) of the elevations.

13. (Currently Amended) The semiconductor chip as claimed in claim 1, wherein the reflective layer or interface coupled to the first main area of the multilayer structure has a reflectivity of at least 70%.

14. (Currently Amended) The semiconductor chip as claimed in claim 1, wherein the reflective layer or interface coupled to the first main area of the multilayer structure has a reflectivity of at least 85%.

15. (Currently Amended) The semiconductor chip as claimed in claim 1, wherein the multilayer structure is applied ~~[[on]]~~ onto a carrier substrate either directly by ~~[[its]]~~ the first main face or via ~~[[a]]~~ the reflective layer.

16. (Currently Amended) The semiconductor chip as claimed in claim 15, wherein the reflective layer or the carrier substrate ~~simultaneously~~ serves as a contact layer of the semiconductor chip.

17. (Currently Amended) The semiconductor chip as claimed in claim 1, ~~wherein~~ further comprising a conductive, transparent layer ~~[[is]] applied [[on]] onto~~ the second main face of the multilayer structure.

18. (Currently Amended) The semiconductor chip as claimed in claim 1, ~~wherein~~ further comprising a transparent protective layer ~~[[is]] applied [[on]] onto~~ the second main face of the multilayer structure.

19. (Withdrawn) A radiation-emitting thin-film semiconductor chip with an epitaxial multilayer structure, which contains an active, radiation-generating layer and has a first main face and a second main face - remote from the first main face - for coupling out the radiation generated in the active, radiation-generating layer,

wherein the first main face of the multilayer structure is coupled to a reflective layer or interface, and a transparent layer is provided between the first main face of the multilayer structure and the reflective layer or interface, said transparent layer being patterned one- or two-dimensionally.

20. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein the transparent layer is conductive.

21. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein the transparent layer between the first main face of the multilayer structure and the reflective layer or interface has convex elevations.

22. (Withdrawn) The semiconductor chip as claimed in claim 21, wherein the elevations have the form of truncated pyramids or truncated cones or a trapezoidal cross-sectional form.

23. (Withdrawn) The semiconductor chip as claimed in claim 21, wherein the elevations have an inclination angle (β) of between approximately 30° and approximately 70° .

24. (Withdrawn) The semiconductor chip as claimed in claim 21, wherein the elevations have an inclination angle (β) of between approximately 40° and approximately 50° .

25. (Withdrawn) The semiconductor chip as claimed in claim 21, wherein the height (h_1) of the elevations is at least as large as the height (h_2) of a non-patterned region of the multilayer structure between the active, radiation-generating layer and the elevations.

26. (Withdrawn) The semiconductor chip as claimed in claim 25, wherein the height (h_1) of the elevations is approximately twice as large as the height (h_2) of the non-patterned region of the multilayer structure between the active, radiation-generating layer and the elevations.

27. (Withdrawn) The semiconductor chip as claimed in claim 21, wherein a cell size (d) of the elevations is at most approximately five times as large as the height (h_1) of the elevations.

28. (Withdrawn) The semiconductor chip as claimed in claim 27, wherein the cell size (d) of the elevations is at most approximately three times as large as the height (h1) of the elevations.

29. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein the layer or interface coupled to the first main face of the multilayer structure has a reflectivity of at least 70%.

30. (Withdrawn) The semiconductor chip as claimed in claim 29, wherein the layer or interface coupled to the first main face of the multilayer structure has a reflectivity of at least 85%.

31. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein the reflective layer is applied on a carrier substrate or the reflective interface is formed by a carrier substrate.

32. (Withdrawn) The semiconductor chip as claimed in claim 31, wherein the reflective layer or the carrier substrate simultaneously serves as a contact layer of the semiconductor chip.

33. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein a transparent protective layer is applied on the second main face of the multilayer structure.

34. (Withdrawn) A radiation-emitting thin-film semiconductor chip with an epitaxial multilayer structure, which contains an active, radiation-generating layer (14) and has a first main face and a second main face - remote from the first main face - for coupling out the radiation generated in the active, radiation-generating layer,

wherein the first main face of the multilayer structure is coupled to a reflective layer or interface, and a one- or two-dimensionally patterned coating layer is arranged on the second main face of the multilayer structure.

35. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein the coating layer has convex elevations.

36. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein the coating layer is transparent and conductive.

37. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein a metal layer is arranged between the coating layer and the multilayer structure.

38. (Withdrawn) The semiconductor chip as claimed in claim 37, wherein the metal layer is formed such that it is very thin or not closed, in particular in reticulated or insular fashion.

39. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein the elevations have the form of pyramids, truncated pyramids, cones or truncated cones or a trapezoidal cross-sectional form or a triangular cross-sectional form or a circle-segment cross-sectional form.

40. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein the coating layer is formed in reticulated or insular fashion.

41. (Withdrawn) The semiconductor chip as claimed in claim 1, wherein the multilayer structure contains a material or a plurality of different materials based on GaN.

42. (Withdrawn) The semiconductor chip as claimed in claim 19, wherein the multilayer structure contains a material or a plurality of different materials based on GaN.

43. (Withdrawn) The semiconductor chip as claimed in claim 34, wherein the multilayer structure contains a material or a plurality of different materials based on GaN.

44. (New) The semiconductor chip as claimed in claim 1, wherein each of the convex elevations is defined by two-dimensional depressions.

45. (New) The semiconductor chip as claimed in claim 1, wherein the semiconductor chip is free of a growth substrate of the epitaxial multilayer structure.

46. (New) A radiation-emitting thin-film semiconductor chip comprising an epitaxial multilayer structure and a reflective layer or interface, the epitaxial multilayer structure comprising:

an active, radiation-generating layer,

a first main face, and

a second main face remote from the first main face for coupling out the radiation generated in the active, radiation-generating layer,

wherein the first main face of the multilayer structure is coupled to the reflective layer or interface, and

wherein a region of the multilayer structure that adjoins the second main face of the multilayer structure is patterned by either one- or two-dimensional depressions forming convex elevations, the convex elevations having an inclination angle (β) of between approximately 30° and approximately 70° .

47. (New) The semiconductor chip as claimed in claim 46, wherein the semiconductor chip is free of a growth substrate of the epitaxial multilayer structure.

48. (New) The semiconductor chip as claimed in claim 46, further comprising a carrier element coupled to the first main face, wherein the reflective layer or interface is arranged between the carrier element and the multilayer structure.

49. (New) The semiconductor chip as claimed in claim 46, wherein the elevations have a form of truncated pyramids or truncated cones or a trapezoidal cross-sectional form.

50. (New) The semiconductor chip as claimed in claim 46, wherein the elevations have a form of cones or a triangular cross-sectional form.

51. (New) The semiconductor chip as claimed in claim 46, wherein the elevations have an inclination angle (β) of between approximately 40° and approximately 50° .

52. (New) The semiconductor chip as claimed in claim 46, wherein the elevations have a height (h_1) at least as large as a distance (h_2) between the patterned region and the active, radiation-generating layer.

53. (New) The semiconductor chip as claimed in claim 52, wherein the height (h_1) of the elevations is approximately twice as large as the distance (h_2) between the patterned region and the active, radiation-generating layer.

54. (New) The semiconductor chip as claimed in claim 46, wherein a cell size (d) of the elevations is at most approximately five times as large as a height (h_1) of the elevations.

55. (New) The semiconductor chip as claimed in claim 54, wherein the cell size (d) of the elevations is at most approximately three times as large as the height (h1) of the elevations.

56. (New) The semiconductor chip as claimed in claim 46, wherein the reflective layer or interface coupled to the first main area of the multilayer structure has a reflectivity of at least 85%.

57. (New) The semiconductor chip as claimed in claim 47, wherein the multilayer structure is applied onto a carrier substrate either directly by the first main face or via the reflective layer or interface.

58. (New) The semiconductor chip as claimed in claim 57, wherein the reflective layer or interface or the carrier substrate serves as a contact layer of the semiconductor chip.

59. (New) The semiconductor chip as claimed in claim 46, further comprising a conductive, transparent layer applied onto the second main face of the multilayer structure.

60. (New) The semiconductor chip as claimed in claim 46, further comprising a transparent protective layer applied onto the second main face of the multilayer structure.

61. (New) The semiconductor chip as claimed in claim 46, wherein the multilayer structure comprises a material or a plurality of different materials based on GaN.